

AMSH1
AMSH2
AMSH
Rpn11
Jab1

THNEFTTTHVIVP--KQSAGPDYCDMENVEELFNVDQDHD--LITLGNWITPTQTAFLS
THNEFTTTHVIVP--KQSAGPDYCDMENVEELFNVDQDHD--LITLGNWITPTQTAFLS
MRNEFTTTHVLIP--KQSAGSDYCNTEENELFLIQDQDQ--LITLGNWITPTQTAFLS
TVRVIOVTFAMPQS--GTGVSVEAVD PVTQAKMLDMLKQTRPEMVVGWYFS PGFGCNLS
TMIIMDSIALPVEGTETRVNAQAAAAYEYMAAYTENAKQVGRLENAIGWYFS PGYGCNLS
... ..

AMSH1
AMSH2
AMSH
Rpn11
Jab1

SVLHHTCSYQIMLPEAIAIVCSEKHKDTG-----IFRLTNAGMLEVSACKKKGFH--PH
SVLHHTCSYQIMLPEAIAIVCSEKHKDTG-----IFRLTNAGMLEVSACKKKGFH--PH
SVLHHTCSYQIMLPEAIAIVCSEKHKDTG-----IFRLTNAGMLEVSACKKKGFH--PH
GVINTQQSFEALSERAVAVVDPIQSVKGVVIDAFRLINAMMVLGHEPRQTTSNLGH
GIVVSTQMLNQFQEPFVAVVIDPRTISAG-----KVNLGATRTYPRGYKPEDEGPSEYQ
... ..

AMSH1
AMSH2
AMSH
Rpn11
Jab1

TKEPRLFSICKHV--LVKDIKI-----IVLDLR-----
TKEPRLFSIQKFLSGIISGTAL-----EMEPLKIGYGPNGFPLLGISRSSSPSEQ
SKNDPPLFCSCSHVT--VVDRAV-----TITDLR-----
LNKPSIQALIHGLNRHYYSITINYRKNELEQKMLLNHKKSHMEGLTLQDYSEHKHNE
TIPLNKIEDFGVHCKQYYALEVSYFKSSLDKLLLELWNYWVNTLSSSSLLTNADYTTG
... ..

AMSH1
AMSH2
AMSH
Rpn11
Jab1

L-----

VVKEMLELAKNYNKAVEEDKMTTQLAKNVGKQDPRHLEKHVDVIMTSNIVQCLAM
QVFDLSEKLEQSEAQLGRGSFMLG--LETHDRKSEDKLAKATROSCKTTEAINGLMSQV

AMSH1
AMSH2
AMSH
Rpn11
Jab1

LDTVVF-----
IKDKLFNQINIS

FIGURE 1

COP9_su5_Hs	VGRLENAIGWYHSHPGYGCWLSGIDVSTQMLNQQFQEPFVA--VVIDPTRTISAGKVNLG
COP9_su5_Dm	VGRMEHAVGWYHSHPGYGCWLSGINVSTQMLNQTYQEPFVA--IVVDPVRTVSAGKVCLG
COP9_su5_At	AGRLENVVGWYHSHPGYGCWLSGIDVSTQRLNQQHQEPFLA--VVIDPTRTVSAGKVEIG
COP9_su5_Ce	EGRKEKVVGWYHSHPGYGCWLSGIDVSTQTLNQKFQEPWVA--IVIDPLRTMSAGKVDIG
AF2198_Arcfu	LPIGMKVFGTVHSHPSPCRPSEEDLSLFTRFGKYHIIVCY--PYDENSWKCYNRKGEV
PH0451_Pyrho	MPHDESIKGTFFHSHPSPPFPSEGDLMFFSKFGGIHIIAAF--PYDEDSVKAFDSEGREV
TVN1035_Thevo	KPIDFSLVGSVHSHPSGITKPSDEDLRMFSLTGKIHIIVGY--PYNLKDYSAYDRSGNKV
MTH971_Metth	LPPFTGAVGSVHSHPGPVNLPAAADLHFFSKNGLFHIIAH--PYTMETVAAYTRNGDPV
aq_1691_Aquae	ISKGMEIVGVYHSHPDHDPDRPSQFDLQRAFPDLSYIIIFSVQ--KGKVASYRSWELKGDKF
RV1334_Myctu	EDADEVPVVIYHSHTATEAYPSRTDVKLATEPDHYVLVSTRDPHRHELRSYRIVDGAVT
RadC_Ecoli	IKINASALILAHNHPSGCAEPSKADKLITERI IKSCQFMDL--RVLDHIVIGRGEYVSFA
.....'HSHP'.....S ''D

FIGURE 3

COP9_bu5_Hs	VGRLENAIGWYHSHPGYGCWLSGIDVSTQMLNQFQEPFVA--VVIDPTRTISAGKVNLG
COP9_bu5_Dm	VGRMEHAVGWYHSHPGYGCWLSGINVSTQMLNQTYQEPFVA--IVVDPVRTVSAGKVCLG
COP9_bu5_At	AGRLENVVGWYHSHPGYGCWLSGIDVSTQRLNQHQEPFLA--VVIDPTRTVSAGKVBIG
COP9_bu5_Ce	EGRKEKVVGWYHSHPGYGCWLSGIDVSTQTLNQKFQEPWVA--IVIDPLRTMSAGKVDIG
Pad1_Dm	TGRPEMVVGWYHSHPGFGCWLSGVDINTQQSFEALSERAVA--VVVDPIQSVKG-KVVID
Pad1_Hs	TGRPEMVVGWYHSHPGFGCWLSGVDINTQQSFEALSERAVA--VVVDPIQSVKG-KVVID
Sksl_Dd	TGRDEIVIGWYHSHPGFGCWLSGVDINTQQSFEQLQSRVA--VVVDPLQSVRG-KVVID
Pad1_Sc	TGRDQMVVGWYHSHPGFGCWLSGVDINTQKSFEQLNSRAVA--VVVDPIQSVKG-KVVID
.....	HSHP''''''S 'D

FIGURE 4